



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Valley Regional Director

EXECUTIVE COMPLIANCE AGREEMENT (January 2006 Revision)

The Rector and Visitors of the University of Virginia
Charlottesville, Virginia
Main Heating Plant

Registration # 40200

Effective date: Later date of signatories, page 4

Purpose and authority

This is an Executive Compliance Agreement (ECA or Agreement) between the University of Virginia (UVA) and the Virginia Department of Environmental Quality (DEQ) pursuant to the Director's authority, as set forth in Sections 10.1-1186(2) and 10.1-1192 of the Code of Virginia, to administer and enforce the Air Pollution Control Law and regulations. The purpose of this Agreement is to address past and present air emissions and throughput exceedances of existing air permit limitations, identified below, and to allow for pollution control upgrades and modifications of UVA's Main Heating Plant (MHP), by establishing interim fuel throughput limits, emissions limits, and recordkeeping requirements during the air permit application and construction phases of the MHP project.

Laws and regulations

UVA's MHP is subject to Title 9, No. 5 of the Virginia Administrative Code. Pursuant to Title 23, Chapter 9 of the Code of Virginia, the Rector and Visitors of UVA are vested with the authority and responsibility to govern UVA. Nothing in this Agreement shall operate to limit such authority of the Rector and Visitors or otherwise violate the laws of the Commonwealth.

Specific Conditions #5 through #7 of Part I of UVA's permit to construct, modify and operate the MHP, effective August 5, 1994 (1994 MHP permit) and Specific Conditions #5 and #6 of Part I of UVA's permit amendment to construct, modify and operate the MHP, effective March 5, 1995 (1995 MHP permit amendment) provided the applicable emissions limitations for UVA's MHP. Specific Condition #4 of the 1995 MHP permit amendment described the fuel allowances for each boiler and the total combined heat input allowances (Btu).

Furthermore, Specific Conditions #4 and #5 of Part I of UVA's permit to construct and operate coal handling, unloading and storage facilities, effective February 14, 1986 (1986 coal handling permit or CHP), set coal throughput limitations at the facility's coal handling facility. Specific Condition #3 of the 1986 CHP also allowed for the construction of seven coal silos. UVA elected to install four of the seven silos. All of the terms and conditions of both permits, except as modified by Appendix A, continued in effect subsequent to the execution of this Agreement, until execution of a new permit, which occurred on July 5, 2005 and was subsequently amended on November 16, 2005, where the new terms and conditions now apply, subject to the provisions set out in Appendix A below.

Compliance and enforcement history

Currently UVA's MHP on Jefferson Park Avenue operates one coal-fired boiler (boiler #3), two coal/gas-fired boilers (boilers #2R and #5), and two oil/gas-fired boilers (boilers #3R and #4R). In accordance with Specific Condition #52 of the 2005 MHP permit, a continuous opacity monitor system (COMS) has been installed to measure and record the opacity from the boiler exhaust stack. In addition, a continuous emissions monitor system (CEMS) has been installed to measure and record the concentration of NO_x emitted from the exhaust stack of boilers #2R, #3R, #4R and #5, in accordance with Specific Condition #14 of the 2005 MHP permit.

In 1993, DEQ issued a Notice of Violation (NOV) to UVA for late and allegedly deficient CEMS reports, failure to submit quarterly emissions reports, and for fuel use exceedences on boilers #1 (now defunct), #3, and #4 that occurred in 1992. A Consent Order (CO) intended to resolve the allegations on the 1993 NOV was entered into by UVA and DEQ and was terminated on June 30, 1998.

In 1995, DEQ issued a second NOV to UVA for allegedly deficient excess emissions reports, coal fuel use exceedence on boiler #3 and failure to provide minimum valid capture data for NO_x emissions on boiler #2R. Also in 1995, DEQ issued a Letter of Admonition for failing to meet the deadline for completing the CEMs unit replacement. A CO intended to resolve the allegations in the 1995 NOV was entered into by UVA and DEQ and was terminated on March 14, 1996.

In 1996, DEQ issued a third NOV to UVA for exceeding the sulfur content for residual oil burned in the #4 boiler, exceeding the percentage ash content of a shipment of coal burned at the facility in 1995, exceeding the coal throughput limitation at the truck unloading station in 1995, and exceeding

the fuel allowance for coal burned as well as the total combined heat input allowance for boiler #5. Specifically, UVA was alleged to be exceeding throughput limits as set out in Part I Specific Condition #4 of the 1995 MHP permit amendment and Part I Specific Condition #5 of the 1986 CHP.

A Consent Order intended to address the 1996 NOV was entered into between DEQ and UVA effective December 13, 1996, that required the completion of supplemental environmental projects (SEPs) and the submittal of a revised prevention of significant deterioration (PSD) permit application. UVA submitted a PSD air permit application dated September 10, 1996, which was subsequently cancelled by the submittal of a new PSD air permit application dated October 25, 2001. In May 2002, UVA embarked on an update of its heating master plan, which included an evaluation of technically feasible pollution control equipment for its existing boilers. As a result of that effort, UVA submitted a third air permit application dated March 31, 2003. UVA completed the SEPs as required by the 1996 Consent Order. On April 1, 2004, UVA submitted a revised air permit application for modifications to the MHP. The application was dated by UVA on March 31, 2004.

On January 29, 2003, DEQ issued a fourth NOV to UVA for three alleged violations of the State Air Pollution Control Law and regulations for certain events occurring at UVA's MHP on January 15 through January 17, 2003:

1. Data from the MHP's CEMS indicated that on January 15, 2003, there occurred an opacity exceedence of 48.1% for a 1 ½ -hour duration during startup/shutdown procedures stemming from the startup of the facility's Boiler #3. UVA failed to notify DEQ of the opacity exceedence within four business hours, in apparent violation of section 9 VAC 5-20-180.C.
2. Data from the MHP's CEMS indicated that on January 16, 2003, there were two hours and six minutes (8:00 p.m. through 10:06 p.m.) of excess opacity with an average magnitude of 71.9%, which was not attributable to startup, shutdown, or malfunction. The opacity readings were in excess of the permitted standards set out in sections 9 VAC 5-40-80 and 5-40-940.B. Contemporaneous with this event, there was a major downwash of coal soot upon a portion of the City of Charlottesville in the immediate vicinity of UVA's MHP. This resulted in part from the operation of the MHP under unusual emergency conditions.
3. Data from the MHP's CEMS indicated that on January 16, 2003, there began four hours and twenty-four minutes (10:12 p.m. on January 16, 2003 through 2:36 a.m. on January 17, 2003) of excess opacity with an average magnitude of 33.3%, which was also not attributable to startup, shutdown, or malfunction. The opacity readings were

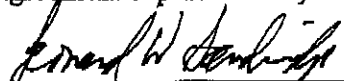
in excess of the permitted standards set out in sections 9 VAC 5-40-80 and 5-40-940.B. This was caused in part from the same emergency.

The emergency that resulted in the alleged violations on January 15 through January 17, 2003 was caused by the consecutive failures of Boilers # 2R and #5, the MHP's two newest and largest boilers. To protect patient care at the University Hospital, UVA took the following mitigating steps during this period to immediately repair a failed tube and to shed load from its MHP:

1. UVA contacted a vendor to make emergency repairs. The vendor mobilized his crew and was at the plant (coming from Richmond during a night time snow event) within three hours of the call.
2. UVA shut off heat to certain buildings and shut down air handling units in buildings that could be controlled remotely. Opacity declined significantly within 1½ hours of this action being initiated.
3. For those buildings and systems that could not be remotely controlled, UVA mobilized crews in UVA's Health System and Academic areas to manually shut down heat to larger buildings and manually shut down air handling units and converters.
4. UVA reduced heating hot water distribution temperature by 22%.

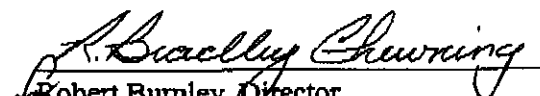
To remedy the alleged violations contained in the January 29, 2003 NOV, as well to resolve the pending actions from the third NOV, UVA agrees to undertake the actions and schedule of compliance set out in Appendix A of this Agreement, as revised. Acceptance of this Agreement shall terminate the Consent Order issued to UVA on December 13, 1996. Termination provisions regarding this Agreement are set out in Part IV in Appendix A, below.

This Agreement and Appendix A shall become effective upon the date of its execution by the Director of the Department of Environmental Quality or his designee. Execution of this Agreement supersedes any earlier Agreements, and Appendices thereto, between UVA and DEQ.



Leonard W. Sandridge,
Executive Vice President and
Chief Operating Officer,
The University of Virginia

1/17/2006
Date



Robert Burnley, Director
Va. Department of Environmental Quality

Jan. 10, 2006
Date

APPENDIX A

I. UVA agrees to the following corrective actions to address certain violations specified in the NOV issued on January 29, 2003:

- A. UVA shall keep a notice posted in the MHP control room providing instructions to operators to contact DEQ via facsimile or electronic mail whenever opacity exceeds 20% or more for over an hour even if occurring during startup, shutdown, or malfunction. Furthermore, the notice shall provide that DEQ shall be contacted any time opacity exceeds 27% for a six-minute average. To facilitate the reporting requirements, UVA will track the specific boilers including fuel type for each boiler operating at any point in time and indicate this information in any required reports indicating status of emissions. Shift operators shall check the COMS and the logbook at the beginning of each shift to ensure that proper notifications have been made to DEQ, if necessary. UVA shall train all boiler operators to follow this procedure.
- B. UVA has added appropriate alarms and instructions to UVA's CEMS software, including the requirement to indicate which boilers are burning fuel at the time of the exceedance.

II. UVA agrees to the following schedule of compliance to address the planned upgrades and boiler modifications of the MHP:

- A. UVA shall utilize natural gas as needed to ensure that emissions limits are not exceeded during any 12-month period on a rolling basis.
- B. UVA shall comply with interim fuel throughput limits, emissions limits, and recordkeeping requirements as set out in Section C, below, during the design and construction phases as set out in this schedule. As new and modified equipment comes online, UVA and DEQ agree to reevaluate these limits and amend this Agreement as appropriate. These interim limits and reporting requirements shall replace the language in Specific Conditions 17, 21, 27, 30, 31, and 32 of UVA's July 5, 2005 permit as amended November 16, 2005. All other permit Conditions and requirements shall continue to apply unless otherwise stated herein.
- C. Boiler modification and construction of air pollution controls shall be conducted in accordance with the permit dated July 5, 2005 as amended November 16, 2005.

III. UVA agrees to the following interim operating scenario and interim fuel throughput limits during construction and upgrades to the MHP:

These interim limitations correspond to Specific Conditions 17, 21, 27, 30, 31, and 32 of UVA's July 5, 2005 operating permit as amended November 16, 2005.

A. Limitations

1. Total combined annual fuel throughput for all boilers (Boilers 1R, 2R, 3, 3R, 4R, and 5)

Approved Fuel Type	Quantity Allowed
Coal	25,042 tons
OR	
Natural Gas	3,240 x 10 ⁶ SCF
AND	
Distillate Oil	1,267 x 10 ³ gallons

Under no circumstances shall any combination of the fuel amounts result in an exceedance of the annual facility-wide emission limits established in Condition III.A.3. Annual throughput of each fuel shall be calculated monthly as the sum of each consecutive 12-month period.

2. Short-term emissions from the operation of each boiler shall not exceed the limits specified below:

	PM	SO ₂	NO _x	CO	VOC
2R	0.05 lbs/MMBtu	1.64 lbs/MMBtu	0.60 lbs/MMBtu	0.19 lbs/MMBtu	N/A
	4.75 lbs/hr	155.94 lbs/hr	57.00 lbs/hr	18.25 lbs/hr	0.52 lbs/hr
3⁽¹⁾	0.00 lbs/MMBtu	0.00 lbs/MMBtu	0.00 lbs/MMBtu	0.00 lbs/MMBtu	N/A
	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr	0.00 lbs/hr
5	0.05 lbs/MMBtu	1.64 lbs/MMBtu	0.60 lbs/MMBtu ⁽²⁾	0.19 lbs/MMBtu	N/A
	5.63 lbs/hr	184.77 lbs/hr	0.20 lbs/MMBtu ⁽³⁾ 67.51 lbs/hr	21.15 lbs/hr	0.59 lbs/hr

- (1) Boiler 3 shall remain off-line, except under emergency conditions as indicated in III.A.5.b.
- (2) Coal emission limit.
- (3) Natural gas emission limit.

3. Annual emissions from the operation of the boilers shall not exceed the limitations specified below:

	PM	SO ₂	NO _x	CO	VOC
MHP	44.29 tons/yr	532.89 tons/yr	251.29 tons/yr	139.25 tons/yr	9.04 tons/yr

- (1) Boiler 3 will remain off-line, except under emergency conditions as indicated in III.A.5.b.

4. NO_x emissions from the operation of Boiler 5 (Ref. 7103-1-05) while simultaneously combusting coal and natural gas during fuel switching shall not exceed 0.60 lbs/10⁶ BTU until coal is no longer fired in the boiler.
5. Emissions from the MHP stack (Stack Ref. 7103-1) shall not exceed the following limits, except as specified below:

Particulate Matter	48.3 lbs/hr
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Sulfur Dioxide	223.7 lbs/hr
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Exceedance of the emission limits shall be permitted under the following conditions only:

- a. Gas service to the plant is interrupted by the City of Charlottesville.
 - b. An “emergency” or “malfunction” occurs as defined by 9 VAC 5 Chapter 10 of the State Regulations for the Control and Abatement of Air Pollution.
6. UVA shall furnish notification to the DEQ of each exceedance of the emission limits in Condition III.A.5 of Appendix A of this Agreement, by electronic mail, facsimile transmission, telephone, telegraph, or any other method that allows UVA to comply with the deadline. Such notification shall be made as soon as practicable but not later than four daytime business hours after the exceedance is discovered. The notification shall provide all pertinent facts, including the estimated duration of the exceedance. When the condition causing the exceedance has been corrected, UVA shall notify the DEQ.
 7. The MHP shall not conduct more than one of the following coal handling activities at any given time:
 - a. Coal loading to trucks.
 - b. Coal unloading from trucks.
 - c. Coal unloading building operations.
 8. UVA and DEQ shall follow DEQ’s notification policy as set out in DEQ’s “Policy on Excess Opacity During Startup and Shutdown Events at Existing Units” memo regarding enforcement discretion, dated April 2, 2003, and Part III of the March 20, 2003 revision of DEQ’s Field Operations Manual for Air Inspectors (known as ASOP-3), in

the event that an opacity exceedance is detected during the startup or shutdown of existing Boiler 3.

9. This scenario shall terminate no later than initial operation of new air pollution controls on boilers 2R or 5, initial operation of boiler 1R, or earlier at DEQ's discretion if a DEQ-approved phasing-in plan is adopted, whereupon the new permit conditions shall apply.

B. Recordkeeping

The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this Agreement. In addition to the recordkeeping requirements contained in the July 5, 2005 MHP permit as amended November 16, 2005 and the Title V permit, UVA shall keep the following records.

1. The monthly and annual throughput of coal (tons), natural gas (million cubic feet), distillate oil (gallons) and fuel heat input (MMBtu) as applicable for each boiler (Ref. 7103-1-1R, 7103-1-2R, 7103-1-03, 7103-1-03R, 7103-1-04R and 7103-1-05) necessary to demonstrate compliance with Condition III.A.1 of Appendix A of this Agreement. The annual throughputs shall be calculated monthly as the sum of each consecutive 12-month period.
2. Annual particulate matter, PM-10, sulfur dioxide, nitrogen oxides (as NO₂), VOC and carbon monoxide emission calculations (in tons) for each boiler (Ref. 7103-1-01R, 7103-1-2R, 7103-1-03, 7103-1-3R 7103-1-4R and 7103-1-05) necessary to demonstrate compliance with Condition III.A.3 of Appendix A of this Agreement, calculated monthly as the sum of each consecutive 12-month period, using calculation methods approved by the Regional Director, DEQ Valley Region.
3. Hourly PM-10 and sulfur dioxide emissions calculations (in pounds) for the MHP stack (Stack Ref. 7103-1) necessary to demonstrate compliance with Condition III.A.5.
4. A log of coal handling activities including the date, time, and name of person performing each coal handling activity.
5. A log of each boiler and fuel type operating at any time, including the date and time each boiler is placed on-line or taken off-line.
6. A log of exceedances of the emission limits in Condition III.A.5 of Appendix A of this Agreement.

These records shall be available on site for inspection by the DEQ for the duration of this

Agreement.

C. Reporting

UVA shall submit quarterly progress reports.

IV. Administrative provisions

- A. This agreement may not be modified or amended without written consent of both parties. The parties agree to consult in good faith as conditions may require. The purpose of this provision is to recognize that this is a process-based schedule spanning several years that may require occasional adjustments based on unforeseen and unforeseeable future events.
- B. The inability of UVA to meet a scheduled deadline shall not result in the automatic termination of this Agreement. A discussion between DEQ and UVA shall be held at the earliest practicable date when a delay has occurred or is expected to occur in order to discuss compliance issues, revising the schedule, future schedule deadlines, and the possible termination of this Agreement.
- B. DEQ and UVA understand and agree that, unless provided herein, this Agreement does not alter, modify, or amend any other existing permit term or condition.
- C. UVA shall schedule a progress review meeting with DEQ at least annually to evaluate current progress, discuss scheduled deadlines for the forthcoming year, and determine whether amendment to this Agreement is necessary.
- D. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of NOVs or ECAs as appropriate by the State Air Pollution Control Board as a result of violations.
- E. Nothing herein shall affect any appropriate enforcement actions by any other federal, state, or local regulatory authority.
- F. This Agreement shall terminate upon the implementation of the applicable terms and conditions of the permit dated July 5, 2005 as amended November 16, 2005. Determination of any shake-down period following completion of construction shall be made within ten days of completion of such construction, upon consultation of both parties to this Agreement.